

CLAIMS

What is claimed is:

1. A system for coating an implantable medical device with a coating composition,
comprising:
 - 5 a reservoir holding a coating composition;
 - an applicator including a coating surface and a porous region in fluid communication
with the coating composition in the reservoir, wherein the porous region is capable of conveying
the coating composition from the reservoir to the coating surface; and
 - a support element to support an implantable medical device in close proximity to or in
10 contact with the coating surface of the applicator.
2. The system of Claim 1, wherein the applicator comprises a hollow tubular body
having a bore, the bore being configured to received the device.
3. The system of Claim 1, wherein the applicator comprises a half-tubular body
configured to receive the device.
- 15 4. The system of Claim 1, wherein the coating surface comprises a completely or
substantially flat substrate on which the device can be placed.
5. The system of Claim 1, wherein the porous region comprises pores having an
average pore radius of about 0.1 microns to about 1000 microns.
6. The system of Claim 1, wherein the porous region has a porosity of about 20% to
20 about 60%.
7. The system of Claim 1, further comprising a temperature controller in
communication with the applicator, the support element or the reservoir for heating or cooling
the coating composition.

8. The system of the Claim 1, wherein the porous region comprises a first sub region and a second sub region, such that the first sub region has an average pore size that is smaller than the average pore size of the second sub region.

9. The system of Claim 8, wherein the second sub region is disposed above the first sub region.

10. The system of Claim 1, additionally including an apparatus to rotate the support element.

11. The system of Claim 1, wherein the implantable medical device comprises a tubular shape having a hollow, longitudinal bore, and wherein the applicator is configured to fit into the hollow, longitudinal bore of the device.

12. The system of Claim 1, wherein the applicator is movable in a linear direction.

13. The system of Claim 1, wherein the device is a stent.

14. The system of Claim 1, further comprising a pressure apparatus to apply pressure to the composition in the reservoir to force the composition to travel through the porous region and onto the coating surface.

15. The system of Claim 1, wherein the applicator is made from a ceramic or polymeric material.

16. The system of Claim 1, wherein the applicator is made from a rigid material such that the coating surface does not comply when the device contacts the coating surface.

17. The system of Claim 1, further comprising a pressurizing device in communication with the applicator or the reservoir for enhancing the conveyance of the coating composition from the reservoir to the coating surface.

18. The system of Claim 1, wherein the applicator comprises:

a first section having a porous region to be placed into the coating composition in the reservoir; and

a second section having a porous region in fluid communication with the porous region of the first section, the second section being disposed over the first section so as to provide a space
5 between the second section and the coating composition in the reservoir, wherein the second section includes the coating surface to coat the implantable medical device.

19. The system of Claim 18, wherein the second section of the applicator comprises a hollow tubular body having a longitudinal bore configured to received the implantable medical device.

10 20. The system of Claim 18, wherein the porous region of the first section has an average pore size smaller than the average pore size of the porous region of the second section.

21. An applicator for coating an implantable medical device with a coating composition, comprising:

a hollow tubular body having a bore configured to receive an implantable medical device;
15 and

a plurality of fibers disposed along the bore of the body, the fibers configured to receive a coating composition to apply the coating composition to the implantable medical device.

22. The applicator of Claim 22, wherein each of the fibers comprise a plurality of filaments.

20 23. A system for coating an implantable medical device with a coating composition, comprising:

a reservoir to hold a coating composition; and

an applicator including a coating surface and a porous region in communication with the coating composition in the reservoir, wherein the porous region is capable of loading the coating surface with the coating composition from the reservoir by capillary action.

24. The system of Claim 23, wherein the device is a stent and the coating composition
5 is a polymer dissolved in a solvent and optionally a drug added thereto.

25. A method of coating an implantable medical device, comprising:
positioning a part of an applicator in a reservoir having a coating composition, the
applicator including a coating surface and a porous region capable of conveying the coating
composition from the reservoir to the coating surface;
10 allowing the coating composition to be conveyed to the coating surface; and
transferring at least some of the coating composition from the coating surface onto an
implantable medical device.

26. The method of Claim 25, wherein the applicator includes a hollow tubular body,
such that the transferring of the coating composition comprises inserting the medical device into
15 the hollow tubular body.

27. The method of Claim 26, wherein the device is moved in a linear direction and/or
rotated within the hollow tubular body.

28. The method of Claim 26, wherein the medical device is inserted in one end of the
hollow tubular body and removed out from the opposing end of the hollow tubular body.

20 29. The method of Claim 25, wherein the coating surface comprises a completely or
substantially flat substrate and wherein the transferring of the coating composing comprises
rolling the implantable medical device on the coating surface.

30. The method of Claim 25, wherein the viscosity of the coating composition is about 10 centipoises at ambient temperature and pressure to about 100 centipoises at ambient temperature and pressure.

31. The method of Claim 25, wherein the device is a stent.

5 32. The method of claim 27, further comprising applying a pressure to the composition in the reservoir for enhancing the conveyance of the coating composition from the reservoir to the coating surface.

33. A method of coating an implantable medical device, comprising:

10 exposing a portion of an applicator to a coating composition, the applicator including a coating surface;

allowing a layer of the coating composition to be formed on the coating surface of the applicator by capillary action; and

transferring at least some of the coating composition from the coating surface onto an implantable medical device.